



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

AK

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/485,153 02/04/00 YOKOYAMA

0 105026

EXAMINER

MM91/1029

OLIFF & BERRIDGE
P O BOX 19928
ALEXANDRIA VA 22320

CHOWDHURY, T.

ART UNIT

PAPER NUMBER

2871
DATE MAILED:

10/29/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/485,153

Applicant(s)

YOKOYAMA ET AL.

Examiner

Tarifur R Chowdhury

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6,7 and 9-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6,7 and 9-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. **Claims 1-3, 8, 9, 14-16 and 20-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenji et al (hereinafter Kenji), JP 08-140107 (provided by the applicant) in view of Enomoto et al. (Enomoto), USPAT 4,793,691.**

4. Kenji discloses in the abstract and shows in figure 1, a projection type image display device, comprising:

- a first light source (11) for emitting light of a first color (red);
- a second light source (12) for emitting light of a second color (green); and

- a third light source (13) for emitting light of a third color (blue); characterized in that:

light from the first light source (11), light from the second light source (12), and light from the third light source (13) are synthesized by color synthesizing optical systems (21-42).

Kenji does not explicitly disclose that the light sources are planar with a single substantially continuous light emission area. However, it is notoriously well known in the art to employ a planar light source for several advantages such as to provide uniform brightness on the entire display area. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to employ planar light sources for the first, second and third light sources of Kenji in order to obtain a uniform brightness on the entire display area. Further, inherently a uniform planar light source has a single substantially continuous light emission area.

Similarly, Enomoto shows in figures 1 and 2 a uniform planar light source (43) with a single continuous light emission area. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to substitute the light sources of Kenji with a uniform planar light source, as taught by Enomoto for bright and uniform display (col. 4, lines 49-54).

Accordingly, claims 1 and 2 would have been obvious.

As to claim 3, Kenji shows in figure 9 that a dichroic prism is used as a color synthesizing optical system.

As to claims 9 and 14, using flat-panel fluorescent light sources or flat-panel

Art Unit: 2871

electroluminescent elements light sources are well known in the art and thus would have been obvious.

As to claims 15 and 16, conventionally electroluminescent elements have organic thin films as light emitting layers and electroluminescent elements comprising optical resonators are well known in the art and thus would have been obvious.

As to claim 20, it is clear from the figures as well as the disclosure that the first, second and third light sources repeatedly light in order.

As to claim 21, Kenji further shows in figure 1 that light from the light source is modulated in the light modulating element and light so modulated is magnified by a projection lens and displayed.

As to claim 24, employing color filters to obtain a color display is well known in the art and thus would have been obvious.

As to claim 25, using a reflection type light modulating element to obtain a reflective display is well known in the art and thus would have been obvious.

As to claim 26, Kenji discloses in the abstract that the light modulating element forms, with time division, a first color component image, a second color component image, and a third color component image. Further the display device of Kenji display a color image by sequential display of the first, second and third color components in the light modulating element and by sequentially lighting of the first, second and third light sources corresponding to the sequential displays.

As to claims 22 and 27, Kenji also shows in figure 9 that the light modulating element is a transmissive type liquid crystal element, the light source is deployed

Art Unit: 2871

opposite one face of the liquid crystal element and images formed on the liquid crystal element are magnified by the projection lens and displayed.

As to claim 23 and 28, viewing magnified virtual images of images displayed is well within the level of ordinary skill in the art and thus would have been obvious.

5. **Claims 1-4, 6, 7, 19, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shoichi et al (hereinafter Shoichi), JP 41-0123512 (provided by the applicant) in view of Enomoto.**

6. Shoichi discloses in the abstract and shows in figure 2, a light source for a color liquid crystal display device, comprising:

- a first light source (21R) for emitting light of a first color;
- a second light source (21G) for emitting light of a second color;
- a third light source (21B) for emitting light of a third color; characterized in that:

light from the first, second and third light source are synthesized by a color synthesizing optical system (23a).

Shoichi does not explicitly disclose that the light sources are planar with a single substantially continuous light emission area. However, it is notoriously well known in the art to employ a planar light source for several advantages such as to provide uniform brightness on the entire display area. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to employ planar light sources for the first, second and third light sources of Shoichi in order to obtain a

uniform brightness on the entire display area. Further, inherently a uniform planar light source has a single substantially continuous light emission area.

Similarly, Enomoto shows in figures 1 and 2 a uniform planar light source (43) with a single continuous light emission area. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to substitute the light sources of Shoichi with a uniform planar light source, as taught by Enomoto for bright and uniform display (col. 4, lines 49-54).

Accordingly, claims 1, 2 and 19 would have been obvious.

As to claim 3, Shoichi shows in figure 5 that a dichroic prism is used as a color synthesizing optical system.

As to claim 4, Shoichi discloses in the abstract that plurality of light emitting diodes are deployed two-dimensionally in the first, second and third light sources, respectively.

As to claims 6 and 7, Shoichi shows in figuresd2, 3 and 6 that lens array element are deployed between the first, second and third light sources and the color synthesizing optical system.

As to claims 21 and 22, Shoichi shows in figure 6 the display device having a transmissive type liquid crystal element as a light modulating element, the light source device being deployed opposite one face of the liquid crystal element and light from the light source is modulated in the light modulating element and is magnified by a projection lens and displayed.

7. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenji in view of Enomoto as applied to claims 1-3, 8, 9, 14-16 and 20-28 above and further in view of Miyashita et al (hereinafter Miyashita), PN 6,011,602.

8. Kenji does not explicitly disclose the claimed prism array. However, as taught by Miyashita by employing a prism array between the light source and the optical system, it is possible to better direct the light. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to employ a prism array between the light source and the optical system of Kenji in order to direct the light better.

Accordingly, claims 10 and 11 would have been obvious.

9. Claims 12, 13, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenji in view of Enomoto as applied to claims 1-3, 8, 9, 14-16 and 20-28 above and further in view of Tomonori et al(hereinafter Tomonori), JP 40-9105929 (provided by the applicant).

10. Kenji does not explicitly disclose the claimed polarization converter elements being deployed between the light sources and the synthesizing optical system. However, Tomonori discloses in the abstract that by employing a polarization converter between the light source and the synthesizing optical system, contrast of light viewing through a liquid crystal panel becomes highest. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to employ polarization converter between the light source and the optical system in order obtain a high contrast of light viewing through the liquid crystal panel.

Accordingly, claims 12 and 17 would have been obvious.

As to claim 13, using reflecting polarizing plates as polarization converter is well known in the art and thus would have been obvious.

As to claim 18, conventionally polarization converter elements are configured of a quarter-wave films and polarization plates (see class 349, subclass 98).

Response to Arguments

11. Applicant's arguments with respect to claims 1-4, 6, 7 and 9-28 have been considered but are moot in view of the new ground(s) of rejection.

Further, it should be noted that Applicant has not argued or in any way attempted to show there is any error in this position taken by the Examiner with regard to claims 2-4, 6, 7 and 9-28, and it is therefore considered that the Applicant has acquiesced.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2871


the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R Chowdhury whose telephone number is (703) 308-4115. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William L Sikes can be reached on (703) 305-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

TRC
October 24, 2001


William L. Sikes
Supervisory Patent Examiner
Technology Center 2800